WHAT IS CLAIMED IS:

1. A receiver for receiving data comprising:

an edge processor operative to make decisions using a plurality of edges of a received data stream;

a multi-phase clock outputting a plurality of clock phases; and

a digital averager coupled to the edge processor and the multi-phase clock and operative to select one of the plurality of clock phases for use by the edge processor.

2. The receiver according to claim 1, wherein said digital averager includes a barrel shifter.

3. The receiver according to claim 3, wherein said barrel shifter comprises:

(i) a finite length;

(ii) at least one set of reference points corresponding to the plurality of phases of the multi-phase clock, said at least one set of reference points being disposed along said finite length; and

(iii) a movable pointer for selecting one of said reference points in said set of reference points in response to a signal, wherein said movable pointer moves from a current position in said set of reference points to a new position in said set of reference points based on a characteristic of said signal.

4. The receiver according to claim 3, wherein said finite length of said barrel shifter describes a circle.

5. The receiver according to claim 3, wherein said at least one set of reference points comprises a first set and a second set.

6. The receiver according to claim 5, wherein said first set comprises a set of reference points corresponding to the plurality of phases of the multi-phase clock

and said second set of reference points comprises a plurality of midpoints of said first set of reference points.

7. The receiver according to claim 3, wherein said movable pointer moves bi-directionally.

8. The receiver according to claim 3, wherein said movable pointer moves right and left.

9. The receiver according to claim 3, wherein said signal corresponds to one of the plurality of edges of the received data stream.

10. The receiver according to claim 3, wherein said finite length of said barrel shifter corresponds to a time interval of one unit interval.

11. A device for tracking phase or frequency comprising:

a clock generator outputting a plurality of clock phases;

a digital averager to receive data corresponding to a plurality of edges of an input data waveform and to generate a control signal in response to said input data waveform; and

a tracking clock generator coupled to the digital averager to receive said control signal and correspondingly adjust a phase of the clock generator.

12. The device according to claim 11, wherein said digital averager comprises a barrel shifter.

13. The device according to claim 12, wherein said barrel shifter is operative to select one of the plurality of clock phases for use in a subsequent decision process, said barrel shifter further comprising:

(i) a finite length;

(ii) at least one set of reference points corresponding to the plurality of phases of the multi-phase clock, said at least one set of reference points being disposed along said finite length; and

(iii) a movable pointer for selecting one of said reference points in said set of reference points in response to a signal, wherein said movable pointer moves from a current position in said set of reference points to a new position in said set of reference points based on a characteristic of said signal.

14. The device according to claim 13, wherein said finite length of said barrel shifter describes a circle.

15. The device according to claim 13, wherein said at least one set of reference points comprises a first set and a second set.

16. The device according to claim 15, wherein said first set comprises a set of reference points corresponding to the plurality of phases of the multi-phase clock and said second set of reference points comprises a plurality of midpoints of said first set of reference points.

17. The device according to claim 13, wherein said movable pointer moves bi-directionally.

18. The device according to claim 13, wherein said movable pointer moves right and left.

19. The device according to claim 13, wherein said signal corresponds one of the plurality of edges of the input data waveform.

20. The device according to claim 13, wherein said finite length of said barrel shifter corresponds to a time interval of one unit interval.

21. A computer readable media having instructions encoded thereon causing a processor to track a phase of an input data waveform by:

detecting a plurality of edges of an input data waveform;

creating a plurality of vote signals in response to said detecting of the
plurality of edges of said input data waveform;

generating a control signal to select a phase of a multi-phase local clock in response to said plurality of vote signals; and

selecting a phase of said multi-phase local clock in response to said control
signal.

22. A computer system including a plurality of modular components communicating with each other, each of the modular components employing an asynchronous receiving method to receive a data stream from another modular component, said asynchronous receiving method comprising:

detecting a plurality of edges within the stream of data;

synchronizing said plurality of edges with a multi-phase local clock;

removing deterministic jitter from said stream of data;

determining whether to change a phase of said local clock based on a history
of edges received and said plurality of edges within the stream of data; and

using the determination of whether to change said phase of said local clock
in a receiver decision process.

23. A computer readable media having encoded thereon instructions causing a processor to:

detect a plurality of edges within the stream of data;

synchronize said plurality of edges with a multi-phase local clock;

remove deterministic jitter from said stream of data;

determine whether to change a phase of said local clock based on a history
of edges received and said plurality of edges within the stream of data; and

use the determination of whether to change said phase of said local clock in
a receiver decision process.